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THIS WEEK´S TOP ARTICLES

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From 45,000 feet in the air

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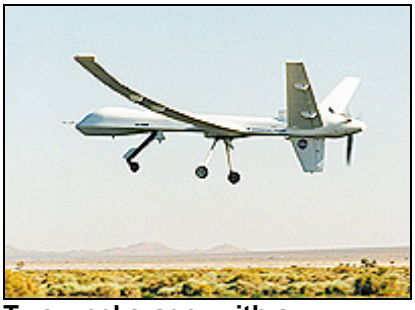
NOAA looks at improving farm weather forecasts



Two weeks ago, with a scientific payload developed by NOAA, a remotely operated aircraft mission demonstration took off in Palmdale, Calif. The flight of the Altair marked the first time the agency has funded an unmanned aerial vehicle mission aimed at filling research and operational data gaps in critical areas, such as weather and water, climate and ecosystem monitoring and management. - Photo courtesy of General Atomics Aeronautical Systems

The government started sending West Coast spy planes aloft – not searching for military enemies but for elusive earth science data that proponents say may pay dividends in improving agricultural weather forecasts.

“That’s the kind of thing we are hoping for,” said Ken Laborde, spokesman for the National Oceanic and Atmospheric Administration.

NOAA and NASA have started conducting the unmanned Altair Integrated System Flight Demonstration Project in cooperation with General Atomics Aeronautical Systems, Inc., the Southern California-based builder of the drones.

A key goal, according to the government, is to evaluate unmanned air vehicles for oceanic and atmospheric research, climate research, marine sanctuary mapping and enforcement, nautical charting and fisheries assessment and enforcement.

Two weeks ago, a scientific payload developed by NOAA was taken aloft by a remotely operated aircraft from Palmdale, Calif.

The flight marked the first time the agency has funded an unmanned aerial vehicle mission aimed at filling research and operational data gaps in critical areas, such as weather and water, climate and ecosystem monitoring and

management, said Laborde. The planes are owned by NASA, he said.

One of the first data compilation efforts was “collecting moisture information from what we call atmospheric rivers in the far reaches of the atmosphere, which also have a bearing on weather patterns,” said Laborde.

That would be accomplished at flight altitudes of up to 45,000 feet on test missions that could span 20 hours, he said.

Future weather equipment payloads could be adapted to monitor and perhaps predict movement of atmospheric pollutants, said Laborde. Though some of the first test flights have looked high into the stratosphere and at marine animal populations, Laborde said the drones could just as easily perform over land masses.

The San Joaquin Valley has one of the poorest air reputations in the United States, which the Environmental Protection Agency blames partly on high ozone concentrations.

The Altair is an offshoot of General Atomics’ Predator B military UAV and was designed for scientific and commercial research by the privately held company.

It has an 86-foot wingspan.

“UAVs have the potential to allow us to see weather before it happens, detect toxins before we breathe them, and discover harmful and costly algal blooms before the fish do – and there is an urgency to more effectively address these issues,” retired Navy Vice Admiral Conrad C. Lautenbacher, Jr. undersecretary of commerce for oceans and atmosphere and NOAA administrator, said in a statement.

“While most Americans associate UAVs with national security, NOAA is working with partners to determine their role in the nation’s environmental security as well.”

In the U.S., annual damage from tornadoes, hurricanes and floods averages $11.4 billion. Asthma affects over 31 million Americans, about one-third of them children, and the rate has jumped 25 percent since 1999, according to the mission team.

The UAV’s endurance, reliability and payload capacity provide the capability in California to help mitigate natural disasters, such as flash floods and fatal mudslides, the government said.

Real-time imagery is fed to the UAV’s ground command center from which the aircraft is piloted.

The flights will be evaluated for future scientific and operational requirements related to NOAA’s oceanic and atmospheric research, climate research, marine sanctuary mapping and enforcement, nautical charting and fisheries assessment and enforcement

NASA partnered with General Atomics Aeronautical Systems to build the Altair, which can carry an internal 660-pound payload.

Sensors in the payload will provide:

• Ocean color images to improve fisheries management through better assessment of ecosystem health, including improved forecasting and warnings of harmful algal blooms;

• Ozone sensor data, to determine ultraviolet vulnerability;

• Gas chromatograph measurements, to help scientists estimate greenhouse gases potentially associated with climate change and global warming;

• Passive microwave data, to help determine when flash flood warnings must be issued;

• Digital images for shoreline mapping, habitat mapping and ecosystem monitoring, including spill and aquatic disease tracking and assessing land-based discharges and marine mammal distribution and abundance; and

• Sensors to provide non-intrusive, maritime surveillance for fishery and marine sanctuary enforcement. Current aerial surveillance has a short survey range and is noisy, dangerous, infrequent and not cost-effective, according to NOAA.

Chip Power reports from Fresno, Calif. Reach him via e-mail at cpower@capitalpress.com.

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